

REMARKS

Claims 27-38 were canceled without prejudice or disclaimer by the Response filed on 12/19/2005 and claims 12-14, 18-26, and 39-40 are canceled without prejudice or disclaimer with this Response, and Applicants reserve the right to pursue these and other similar claims in future applications. Claim 1 has been amended to further clarify the invention, claims 6 and 10 have been amended to correct typographical mistakes, and claims 41-68 have been added. Claims 1-11, 15-17, and 41-68 are now pending in the present application.

Teleconference with Examiner

Applicants thank the Examiner for spending time on a teleconference with Applicants' representative on February 7, 2006, in which the newly imposed restriction requirements were discussed. Applicants' representative also explained proposed claim amendments and how they differ from the cited references. The Examiner suggested some modification on the proposed claim amendments to further clarify the claimed embodiments.

No agreement was reached during the teleconference.

Office Action of January 12, 2006

Applicants have carefully reviewed and considered the Office Action of January 12, 2006. Applicants hereby request entry of this Response and further consideration of the present application in view of the above amendments and following remarks.

Restriction Requirement

In the Office Action, the examiner made a second restriction requirement and divided the previously pending claims 1-26 corresponding to Group I from the previous restriction requirement into two groups: claims 1-20, 22, and 25 directed to memory devices, claims 19-21, 23, 24, 26, 39, and 40 directed to method of using the memory devices. Applicants respectfully disagree with this second Restriction Requirement and traverse the same for the following reasons.

Claims 19-21 and 39-40 are dependent from claim 18, which is dependent from claim 1, and further clarify how an electrical charge is transported into a floating gate of the invention. The electrical charge is not transported into the floating gate of the invention under any circumstance, and claims 19-21 and 39-40 clarify some combinations of voltages under which the electrical charge migrate into the floating gate.

Claims 23 and 24 depend from claim 22, which depends from claim 1, and claim 26 depends from claim 25, which depends from claim 1. Claims 23 and 24 specify some conditions under which a charge inside the floating gate can be determined, and claim 26 specifies one condition under which a charge can be removed from the floating gate. Applicants submit that claims further limit claim 1 and all of three embodiments are related inventions and not patently distinct from one another.

For the same reason stated above, Applicants submit that claims 19-21, 23, 24, 26, and 39-40 further limit claim 1. Notwithstanding the above traversal and in an effort to move forward the present application, Applicants hereby provisionally agree to the election of claims 1-11 and 15-17, made by the Examiner, to be prosecuted in this application.

Claim Objections

Claims 6 and 10 have been objected by the Examiner for typographical errors. Claims 6 and 10 have been amended, and the typographical errors have been removed. Applicants respectfully suggest that these objections be withdrawn.

Claims 18, 22, and 25 have been objected by the Examiner as failing to further limit the subject matter of a previous claim. Applicants traverse the objection. Notwithstanding the traversal and in an effort to move forward the application, Applicants have canceled claims 18, 22, and 25.

Claim rejection under 35 U.S.C. 102(b)

Claim 1

Claims 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Sung (U.S. Patent No. 6,018,178). Applicants traverse this rejection.

Sung directs to design and fabrication of an EEPROM cell (Abstract). The EEPROM cell structures disclosed by Sung includes a control gate (40) placed between two floating gates (10A, 10B), where the control gate (40) is lower than two floating gates (10A, 10B) (FIG. 9).

Amended claim 1 is directed to a memory cell having a control gate and two floating gates, wherein the control gate is higher than the floating gates and the control gate does not overlap the diffusion regions. By having the control gate higher than the floating gates a greater coupling ratio between the control gate's voltage and the floating gate's voltage can be achieved as stated in paragraphs [0030]-[0032] of the specification.

In order to anticipate claim 1, the cited references must disclose or suggest every element of claim 1 (MPEP §2131). Because Sung does not disclose or teach, either individually or in combination with other cited references, at least the control gate being higher than the floating gates and the control gate does not overlapping the diffusion regions, Sung cannot anticipate amended claim 1. Therefore, Applicants submit claim 1, as amended, is patentable over Sung and allowance thereof is requested.

Claims 3, 4, 6, 8, 10, 15, and 16

The Office Action rejected claims 3, 4, 6, 8, 10, 15, and 16 as being anticipated by Sung. Applicants traverse the rejection.

Claims 3, 4, 6, 8, 10, 15, and 16 are dependent from claim 1 and further add elements to the memory device of amended claim 1. Therefore, Applicants submit that claims 3, 4, 6, 8, 10, 15, and 16 are patentable over the cited reference for at least reasons stated above with respect to the patentability of amended claim 1, and the allowance thereof is requested.

Claim rejection under 35 U.S.C. 103(a)

Claim 2

Claims 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sung (U.S. Patent No. 6,018,178). Applicants traverse the rejection.

Claim 2 is dependent from claim 1 and further adds elements to the memory device of amended claim 1. Therefore, Applicants submit that claim 2 is patentable over the cited reference for at least reasons stated above with respect to the patentability of amended claim 1, and the allowance thereof is requested.

Claims 5, 7, 9, 11, and 17

Claims 5, 7, 9, 11, 13, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisamune (U.S. Patent No. 5,929,480). Applicants traverse the rejection.

Claims 5, 7, 9, 11, 13, 17 are dependent from claim 1 and further add elements to the memory device of amended claim 1. Therefore, Applicants submit that claims 5, 7, 9, 11, 13, 17 are patentable over the cited reference for at least reasons stated above with respect to the patentability of amended claim 1, and the allowance thereof is requested.

New Claims 41-68

Claims 41-68 are similar in scope to amended claims 1-18, and specifically claims 41 and 56 are similar to claim 1 but directed toward embodiments disclosed by figures 2B, 6A, 6B, and 6C. They do not introduce new matter and are fully supported by paragraphs [0030]-[0032] and [0043], and corresponding figures in the specification.

Conclusion

In view of the foregoing remarks, Applicants respectfully submit that claims 1-11, 15-17, and 41-68 are in condition for allowance and entry of the present amendment and notification to that effect is earnestly requested. If necessary, the Examiner is invited to telephone Applicant's attorney (404-815-3383) to facilitate prosecution of this application.

No additional fees are believed due. However, the Commissioner is hereby authorized to charge any additional fees that may be required, including any necessary extensions of time, which are hereby requested to Deposit Account No. 03-0683.

Respectfully submitted,
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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, Alexandria, VA 22313-1450, on this ____ day of _____, 2006.

Lucille Golden-Blakey